

FORM 504 Rev. Dec. 1933 DEPARTMENT OF COMMERCE U.S. COAST AND GEODETIC SURVEY R. S. PATTON, DIRECTOR						
DESCRIPTIVE REPORT 15/15/15/15/15/15/15 Hydrographic Sheet No. 5708, 6706						
State New Hampshire						
Gulf of Maine Submarine Trial Course						
10 Miles East of Isles of Shoals						
193 41						
C.D. Meaney						

DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY

H6706

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. ____21____

REGISTER NO. H-6706
State New Hampshire
General locality Gulf of Maine
Locality Island of theals Innites East of Islands
Locality 1999 of Oncals Last Last of Lives of Contact
Scale 1:20,000 Date of survey Sept-Oct. , 1941
Vessel LYDONIA
Chief of Party C. D. Meaney
Surveyed by Ship's Officers
Protracted byJ. D. Curd
Soundings penciled by J. D. Curd
Soundings in FESTIVE feet
Plane of reference
Subdivision of wire dragged areas by
Inked byA.R. STIRNI
Verified by A. R. STIRNI
Instructions dated (CS-269) August 2 , 1941
Remarks: The positions were protracted and the soundings
penciled at the Norfolk Processing Office.
2WW 4/27/42

DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. _______

REGISTER NO. H-6708

State Haine V New Hampshire
General locality Atlantic Scene Gulf of Maine
Locality Ten miles east of Isles of Shoals
Scale 1:10,000 Date of survey SEPT OCT, 19 41
Vessel LYDONIA
Chief of Party C. D. Meaney
Surveyed byShip's Officers
Protracted by E. G. Cunney
Soundings penciled by E. G. Cunney
Soundings in fathous feet
Plane of reference M. L. W.
Subdivision of wire dragged areas by
Inked by
Verified by
Instructions dated Aug. 2,1941 & Suppl.Inst. Oct. 1, 19 41
Remarks: This sheet was protracted and soundings penciled at
the Norfolk Processing Office

U. S. GOVERNMENT PRINTING OFFICE

Field Notes Outlined

for

DESCRIPTIVE REPORT

to accompany Hydrographic Sheets

Field No. H-11 (Reg. No. 6708) & Field No. H-21 (Reg. No. 6706)

INSTRUCTIONS

This survey was executed in accordance with the Director's instructions for Project CS-269, dated August 2, 1941, and supplemental instructions, dated October 1, 1941.

CONTROL

The control consisted of a buoy traverse located by the taut fied in wire - sun azimuth method. This traverse was tied into triangulation on Boon Id., Isles of Shoals and Thacher Id. by sextant angle observations.

SURVEY METHODS

Standard survey methods were used throughout the survey of this area. The ship's position was determined almost entirely by three point visual fixes on buoys. RAR control was used for a very brief period on two days. The velocities used in plotting the few RAR positions were determined in the following manner.

On one of the days on which RAR was used a taut wire line was run at the same time. Positions were taken and plotted along the taut wire line. The velocities necessary to make the arcs from the sono buoys intersect at these positions were used in plotting other RAR positions on the boat sheet.

The great majority of recorded soundings were obtained from the Dorsey No. 1 Fathometer. On one day when the Dorsey Fathometer was not working properly, soundings were scaled on the "808" fathogram and recorded in the sounding volumes. The "808" fathometer was run simultaneously with the Dorsey No. 1.

All of the sounding volumes have been inspected for missing Dorsey fathometer soundings. Soundings that were missed by the Dorsey fathometer observer have been scaled on the "808" fathogram where

possible and entered in the sounding volumes with explanatory notes. The following method was used to determine a relationship between the Dorsey soundings and the corresponding "808" Recorder soundings.

Several soundings observed before and after the missing Dorsey soundings were compared with corresponding soundings on the "808" fathogram. A mean correction was determined and entered in the record as an additional correction to the scaled "808" recorder soundings.

The fathograms are clear and sharp to depths of about 60 fathoms. Below this depth, however, the "808" recorded soundings unsatisfactorily. The initial line of the second position was recorded at about 64 fms. and covered most of the returns at that depth. It was found in comparing the "808" and Dorsey returns that there was no constant relationship between corresponding soundings. Difference varied between 0 feet and 8 foot. Soundings on the "808" were recorded in fathoms. Differences as much as 8 feet generally were noted where the bottom was irregular or when depths were changing rapidly. The "808" recorder tender pushed the fix marker button when he heard "mark" or the time signal when the fix was being taken. Any hesitancy on the part of the tender would produce a time lag between the two records and thus give rise to this source of error when supposedly corresponding soundings were compared.

Development of the following areas specified in the Instructions
(a) in depths of less than 300 feet (b) within a distance of 1/2
mile of Latitude 42° 57.1', Longitude 70° 22.1' (c) within a distance
of 1/2 mile of Latitude 42° 59.80', Longitude 70° 20.45' was
accomplished by spacing the sounding lines less than 100 meters apart
on Hydrographic Sheet H-11, scale 1-10000. No indication of the
reported pinnacle rock or a shoal was found near the position
indicated in Instructions, namely Latitude 42° 57.1', Longitude

10° 22.1'.

DISCREPANCIES * COMPARISONS WITH PREVIOUS SURVEYS

These will be considered after completion of the plotting of the smooth sheet.

DANGERS

No obstructions which would be dangerous to navigation were found. The pinnacle rock reported in Instructions to be at Latitude 42° 57.1', Longitude 70° 22.1' was not found. The two moorings described in the Instructions were recovered. A separate report on the recovered moorings has been submitted.

CHANNELS AND ANCHORAGES

There are no channels or anchorages in the area surveyed.

LAND MARKS

No new land marks for charting purposes were located during the execution of the survey.

GEOGRAPHIC NAMES

The geographic names appearing on Chart 1206 are correct for the area of this survey.

Respectfully submitted:

Norman Porter, Aid, USC&GS.

Approved and Forwarded:

Meaney, Chief of Party.

TIDAL DATA

(1941) (1941) Hydrographic Sheets - H-6706 - H-6708

In accordance with the Director's Instructions, a portable tide gage was maintained for the duration of the survey at Gosport Harbor, Star Island, Isles of Shoals, by the personnel of the LYDONIA and the GILBERT.

Position of station - Lat. 42° 58.7', Long. 70° 36.9'

Mean low water is 0.145 feet on the tide staff.

Highest tide observed - September 23, 1941 - (10.81) on tide staff.

Lowest tide observed - September 21, 1941 - (-1.0) below zero of tide staff.

H6706 H6708

STATISTICS FOR SHEETS, FIELD NO. H11 & H21

H-6706 - H-21

DAY	DATE	STAT. MILES	SOUNDINGS	POSITIONS
A	Sept. 15	8.0	140	3
В	" 16	30.1	989	76
C	" 17	92.6	2857	. 226
D	" 18	112.3	3552	312
E	" 19	73.4	2392	210
F	" 23	41.9	1287	109
G	" 24	26.0	912	75
Ħ	Oct. 7	17.4	513	53
J	" 8'	70.0	2371	207
K	" 9		2525	229
L	" 10	41.4	1313	124
M	" 14	34.3	1336	132
N	" 16	54.6	1825	188
	TOTALS	681.0	22012	1944
		H-6708 - H-	11	
A	Sept. 23	10.6	434	38
В	¹¹ 24	57.6	2079	212
C	" 27	2.1	409	36
D	Oct. 1	53.3	2032	217
E	" 16	9.6	357	43
	TOTALS	133.2	5311	546

Area - statute miles - 48

No. of buoys planted - 12

Stat. miles of taut wire run - 42.3

No. of sun azimuths observed - 14

H6706 H6708

FATHOMETER CORRECTIONS

The fathometer corrections for these sheets were worked up by the personnel of the LYDONIA and GILBERT.

The corrections were obtained using standard methods.

The corrections were made up for each trip and are submitted in separate cahiers.

A D D ETN D U M

SHEET NO. H - 6706

Discrepancies

Latitude 42° 53.80' and Longitude 70° 24.04': 124 to 125 N.

These 2 positions were rejected and the soundings were not plotted due to faulty fixes and discrepancy in time. This area is well developed without these soundings.

Latitude 42° 57.65' and Longitude 70° 20.05': 102 - 107E.

This line appears to be displaced. If position 104 E were held and the line were bent between 103 and 107 E about 100 meters, there would be better agreement of the hydrography in this area. This line is now plotted according to fixes given in the sounding records.

Note:

(944) (944)
Descriptive reports for H-6706 and H-6708 were combined in one descriptive report which was sent to the Washington Office together with sheet H-6708.(1941)

I. V. Zeskind, Asso. Cartographic Engr.

Norfolk Processing Office, Norfolk, Virginia September 28, 1942,

Paul C. Whitney

Supervisor, SE District

Forwarded and Approved

ADDENDA

H6708

HYDROGRAPHIC SHEET NO. H-6708

Below is listed areas where poor agreement of adjacent hydrography sheet says exists. This is probably due to variable positions caused by current and scope of ground tackle:

Çross	ing	Latitude	Longitude	Difference
21 - 22B(red)	69 - 70B(red)	42° 59!91	70° 20!18	4'
112B(red)	34 - 35A(red)	42 59.48	70 20.50	, 4 1
206-207B(red)	6 - 7A(red)	42 59.2	70 21.3	41
207-208B(red)	115-116B(red)	42 59.3	70 21.2	. 41

Line 201 to 212B(red), ending in the vicinity of signal GNU is in to 2010 were poor agreement with cross lines. The southwest portion of this line of disgreement would be in better agreement with adjacent hydrography if it were with Day says moved northwest.

74 - 75D(red) Lat. 42° 56!62 Long. 70° 22!58

The 352 foot sounding falling in the vicinity of 389 feet was not plotted, as the 808 fathogram record while indistinct does not indicate a sounding as shoal as 352ft.

retained

See item 10

of Review

92 - 93D(red) Lat. 42° 56160 Long. 70° 22155
Soundings from 13-19-36 to 13-20-50 were not plotted as they appear to have been read 10 fathoms too shoal. The 808 fathogram while indistinct, indicates deeper soundings than those recorded.

Respectfully submitted,

Isadore M. Zeskind Assoc. Cartegraphic Eng!r.

Norfolk, Va., June 25, 1942.

Respectfully forwarded,

Lieut Comdr. U.S.C.& G.S.

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Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. . #6706

Records accompanying survey:	
Boat sheets sounding vols.(11); w	vire drag vols;
bomb vols(1); graphic recorder rolls	5 (5);
special reports, etc() capiers of miss	çellaneous data
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The following statistics will be submitted rapher's report on the sheet:	with the cartog-
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Number of soundings erroneously spaced	.113
Number of signals erroneously plotted or transferred	• • • • •
Topographic details Time	• • • •
Junctions Time	.24
Verification of soundings from graphic record Time	.30
Verification by .A.RSTIRM Total time	.180. Date 74: 1.1943
Review by F.H. Carteno. Time	28 Date Jan. 6/1943

Surveys Section (Chart Division)

hydrographic survey no. 46.708

Records accompanying survey:							
Boat sheets .one; sounding vols(3); wire drag vols;							
bomb vols; graphic recorder rolls (5) (with H-6706)						
special reports, etc. (.) canters of miscellan	eous data filed with H-6706						
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The following statistics will be submitted wit rapher's report on the sheet:	h the cartog-						
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Number of signals erroneously plotted or transferred	• •						
Topographic details Time	••						
Junctions Time	•••						
Verification of soundings from graphic record Time	. .						
Verification by A.H. Carolino. Total time 48.							
Review by Fith Carolina Time 7.	Date						

MEMORANDUM IMMEDIATE ATTENTION

DESCRIPTIVE REPORT > _	Mox xx	registered Oct. 5,1942 registered Oct. 5,1942 verified reviewed approved
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This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

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MEMORANDUM IMMEDIATE ATTENTION

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE	Initial	Attention called to
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TIDE NOTE FOR HYDROGRAPHIC SHEET

October 12, 1942

Division of Hydrography and Topography:

Division of Charts: Attention: Mr. H. R. Edmonston.

Plane of reference approved in 11 volumes of sounding records for

HYDROGRAPHIC SHEET 6706

Locality Submarine Trial Course 10 miles east of Isles of Shoals

Chief of Party: C. D. Meaney in 1941 Plane of reference is mean low water reading O.2ft. on tide staff at Gosport Harbor 16.2ft. below B. M. 2

Height of mean high water above plane of reference is 8.7 feet.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

в. сотепникит разнуше оттов 15482:

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTER NO. 6708 Field No. H-11

New Hampshire, Gulf of Maine, East of Isles of Shoals Surveyed in September-October 1941; Scale 1:10,000 Instructions dated August 2 and October 1, 1941

Soundings: Fathometer, Dorsey I; Depth Recorder 808 Control:
Visual Fixes on Hydrographic
Buoys

Chief of Party - C. D. Meaney Surveyed by - Ship's Officers Protracted by - E. G. Cunney Soundings plotted by - E. G. Cunney Verified and inked by - R. H. Carstens Reviewed by - R. H. Carstens Inspected by - H. R. Edmonston

1. Shoreline and Signals

No shoreline falls within the limits of this offshore survey. See page 1 of the Descriptive Report for source of signals.

2. Sounding Line Crossings

The crosslines in the area of hydrography in Lat. 42°58', Long. 70°22.5' is unsatisfactory and is omitted. The differences in depth between soundings on the crossline and soundings on the regular system of lines amounts to as much as 12 feet and is probably caused by the displacement of soundings from their true position as a result of using the position of the anchor of the buoy rather than the position of the buoy signal in plotting the sounding lines. The scope of the buoy signal from the buoy anchor was approximately 100 meters for each buoy, permitting a possible variation in the position of the buoy signals of 200 meters. Observations necessary for plotting the position of the buoy signal from the buoy anchor were not made while the survey was in progress. With the realization that some of the lines may be displaced as much as 200 meters with respect to each other and

about 100 meters with respect to their true position, the desirability of having observations necessary for plotting the positions of the buoy signals is quite evident. Each of the two areas of hydrography on this sheet were surveyed largely on two separate days. When conflicts occurred between soundings on adjacent lines of different days, soundings of the day covering the greatest portion of the area were accepted as correct and the conflicting soundings of the other day involved were omitted.

3. Depth Curves

Satisfactory.

4. Junctions with Contemporary Surveys

The present survey falls within the limits of H-6706 (1941) and the junction will be considered in the review of that survey.

5. Comparison with Prior Surveys

a. H-1305 (1854-1875) 1:400,000

Agreement with the few soundings from this small scale sheet is fair. The present survey is considered adequate to disprove the existence of any shoaler sounding from the earlier survey.

b. H-4805 (1927) 1:40,000

Depth agreement with this survey is good. In spots individual soundings differ by as much as 20 feet but these differences are to be expected considering the steep slopes. In most cases similar depths can be found within a distance of 100 meters. The present survey is much more closely developed than the earlier survey and is considered adequate to superside it in the common area.

C. H-4800 (1928) W.D. 1:30,000 H-6707 (1941) W.D. 1:10,000

The present survey is in accord with the effective depths of these surveys.

6. Comparison with Chart 1206 (Latest print date 8-24-42)

The soundings charted within the limits of the present survey originate with the previously discussed surveys and need no further consideration. No aids to navigation fall within the limits of the present survey.

7. Condition of Survey

Satisfactory.

8. Compliance with Instructions for the Project

Satisfactory.

9. Additional Field Work Recommended

None.

10. Discrepancy

The sounding of 352 feet (74-75D) in Lat. 42°56.62', Long. 70°22.58' mentioned on page 8 of the Descriptive Report has been retained despite the fact that there is no apparent indication of such shoal depths on the fathogram. A sounding of 362 feet (not plotted by processing office) between positions 92 and 93D of this survey and a sounding of 361 feet between positions 193-194C of the overlapping survey (H-6706) substantiate the shoal indication. Because of stray markings, the fathograms of this survey are indistinct and complete reliance cannot be placed on them.

11. Superseded Surveys

H-1305 (1854-1875) H-4805 (1928)

Examined and Approved:

Chief, Surveys Section

Chief, Division of Charts

ief, Section of Hydrography Chief, Division of Coastal Surveys

TIDE NOTE FOR HYDROGRAPHIC SHEET

October 12, 1942.

Division of Hydrography and Topography:

Division of Charts: Attention: Mr. H. R. Edmonston

Plane of reference approved in volumes of sounding records for

HYDROGRAPHIC SHEET 6708

Locality Submarine Trial Course, 10 miles east of Isles of Shoals

Chief of Party: C. D. Meaney in 1941
Plane of reference is mean low water reading
O.2 ft. on tide staff at Gosport Harbor
16.2 ft. below B. M. 2

Height of mean high water above plane of reference is 8.7 feet.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

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DIVISION OF CHARTS

SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6706 Field No. 21

New Hampshire, Gulf of Maine, East of Isles of Shoals Surveyed in September - October 1941; Scale 1:20,000 Instructions dated August 2; October 1, 1941

Soundings: Fathometer Control: Sextant Fixes on Dorsey I; Depth Recorder 808 Buoys

Chief of Party - C. D. Meaney Surveyed by - Ship's Officers Protracted by - J. D. Curd Soundings plotted by - J. D. Curd Verified and inked by - A. R. Stirni Reviewed by - R. H. Carstens Inspected by - H. R. Edmonston

1. Shoreline and Signals

No shoreline was transferred to this offshore survey. See page 1 of the Descriptive Report for origin of signals.

2. Sounding Line Crossings

Sounding line crossings differ by as much as 12 feet, as for example in Lat. 43°00.5'; Long. 70°19.4' where a 445-ft. sounding falls on a 457-ft. sounding. These differences are probably caused by the method of control (sextant fixes on buoy signals which have considerable scope) and in some cases by the unsatisfactory operation of the fathometer. However, differences are not considered important in the depths involved.

3. Depth Curves

Satisfactory.

4. Junctions with Contemporary Surveys

A satisfactory junction was made with H-4805 (1927) on the west. The present survey supersedes a portion of this earlier survey. Agreement within the common area is good except in areas of steep gradient where

there are differences of as much as 20 feet, which are probably caused by a slight displacement of sounding lines on the present survey.

H-6708 (1941) falls within the area of the present survey. The agreement in depth is good except where the bottom is irregular. In such areas there are differences of as much as 50 feet which are probably due to the displacement of sounding lines caused by the scope of the buoys used as signals.

Supplementary soundings from the present survey have been transferred to this larger scaled survey, which should be used in charting the area.

There are no contemporary surveys on the south and east.

5. Comparison with Prior Surveys

- a. H-1305 (1853-74) compiled from various surveys. This survey is not immediately available for comparison except with respect to soundings charted from it. (chart 1206) Differences with the charted soundings amount to as much as 100 feet as, for example, the sounding of 318 feet in Lat. 42°56.0'; Long. 70°22.3' which falls in present depths of 418 feet. The early surveys from which H-1305 was compiled are controlled largely by dead reckoning. The present survey is developed closely enough to disprove any shoaler soundings from the earlier survey and should supersede it in the common area.
- b. $\frac{\text{H-4805 (1927)}}{\text{comparison.}}$ 1:40,000. See item 4 for
- c. H-4800 (1928) W.D. 1:30,000

 H-6707 (1941) W.D. 1:20,000

 Depths of the present survey do not conflict with the effective depths of these wire drag surveys.

6. Comparison with Chart 1206 (Latest print date 8-24-42)

a. Hydrography

The charted hydrography originates with the previously discussed surveys which need no further consideration.

Aids to Navigation b.

There are no aids to navigation within the limits of the present survey.

- 7. Condition of Survey Satisfactory.
- 8. Compliance with Instructions for the Project Satisfactory.
- 9. Additional Field Work Recommended None.
- 10. Superseded Surveys

H-1305 (1853-74) in part H-4805 (1927)

Examined and approved:

Chief. Surveys Branch

Chief, Division of Charts

Chief, Section of Hydrography

Chief, Division of Coastal Surveys

6706 Partially applied to Cht. 1206 11-18-42 X. R. 6708 Fully applied to Cht. 1206 11-18-42 X. R. 6706 and 6708 applied & Charl Correction 50 march 9, 1943 How